CITY OF PERRYTON WELL #2 (OCHILTREE COUNTY) PERRYTON, TEXAS

EPA ID# TX0001399435
Site ID: 0605015

EPA REGION 6
CONGRESSIONAL DISTRICT 13

Contact: Vincent Malott
214-665-8313

Last Updated: October 2012

Background

The Site is located within the City of Perryton in the extreme northern most part of the Texas panhandle in Ochiltree County. The City of Perryton has a population of approximately 7,758 people. Well No. 2, which has been plugged and abandoned, was located on a 1.7 acre maintenance yard used by the City of Perryton Utility Department. The maintenance yard is located near the northwest corner of Amherst Street and Santa Fe Ave. Well No.2, which was a public drinking water supply well contaminated by carbon tetrachloride, was taken out of service in June 1989 when the Texas Department of Health originally documented the contamination.

The Ogallala aquifer is the principal source of drinking water for the City of Perryton. The public water supply system consists of 11 or more wells completed in the Ogallala aquifer. Well No. 2 has a total depth of 420 feet and a static water level of 290 feet. Within the Site, the Ogallala has been divided into an upper and lower flow zones. The principal production zone for the City of Perryton is the lower flow zone, while the upper flow zone produces a minimal amount of water and is isolated from the lower zone. Ground water flow in the lower zone is to the south-southeast.

The selected site-wide remedy in 2002 was a ground water pump and treat (P&T) system composed of two extraction wells and an air stripper treatment plant (ASTP) to remove the carbon tetrachloride from the extracted ground water. Two additional extraction wells were completed adjacent to City Well No. 2, targeting two separate intervals in the upper flow zone of the Ogallala aquifer. Well drilling, construction, and initial development were completed in December 2006 followed by additional development of each well in January 2007. The two new wells did not produce a sufficient quantity of water to operate as extraction wells and are now used instead as ground water monitoring wells.

Sample results from July 2007 confirmed that ground water in the lower flow zone had been cleaned up. The pump and treat system was shut down in order to evaluate potential contaminant rebound in the extraction wells followed by sampling on October 29, 2007 and a second event on November 28, 2007. The October 29th sample results indicated no change in extraction well MW-17EX, but Well No. 2 rebounded back to concentrations similar to pre-cleanup conditions. Following the November 28th sampling, Well No. 2 was re-started to ensure that the lower zone did not become contaminated again. The results for Well No. 2 indicated that contamination from the upper zone of the Ogallala was migrating downward along the gravel packed annulus of Well No. 2 and contaminating the lower zone. Continued operation of Well No. 2 after 2007 was necessary to prevent recontamination of the lower zone. The two extraction wells were sampled again during the week of January 7, 2008, and well MW-17EX contained 1 µg/L of carbon tetrachloride (CTC) and Well #2 contained 3.6 µg/L of CTC.

In coordination with the City of Perryton, EPA developed plans for abandonment of Well No. 2 that included over drilling the original borehole, removing the gravel packed annulus, and cementing inside and outside of the well casing to prevent vertical migration from the upper flow zone to the lower production zone in the Ogallala aquifer. EPA completed the plugging and abandonment of Well No. 2 in January

2011. Quarterly site-wide ground water sampling event were conducted in 2011, and no changes were detected in the lower flow zone carbon tetrachloride concentrations since the site-wide sampling events in April 2008 and July 2007. The lower zone wells have all remained below the cleanup goal of 5 micrograms per liter (µg/L or ppb). Based on the recent sampling data, the abandonment of Well No. 2 was successful in preventing further vertical migration between the upper and lower flow zones. The remaining extraction well MW-17EX was shut-down along with the treatment plant in May 2011 when the City completed a water supply line to the northern distribution system and water from well MW-17EX was no longer needed.

Since the pump and treat system, or another remedial technology, is not capable of cleaning up the upper flow zone of the aquifer, EPA prepared a technical impracticability (TI) waiver for the carbon tetrachloride and nitrate cleanup standards in the upper zone of the Ogallala aquifer. EPA signed a Record of Decision Amendment in September 2011 that amends the 2002 selected remedy by including the TI waiver for the upper flow zone and the addition of institutional controls for property above the remaining contaminated ground water. The surface boundary of the TI Zone and the remaining ground water contamination is presented in the figures below.

Current Status

The site is in the 8th year of the 10-year long-term remedial action and quarterly ground water monitoring is planned to continue until September 2014. The ground water data is collected to ensure that there is not a reoccurrence of the carbon tetrachloride contamination in the lower flow zone of the aquifer and that the remaining contamination in the upper flow zone remains within the designated TI Zone. The ground water pump and treat system has remained shut-down since May 2011. A quarterly ground water sampling event was completed in September 2012, and the next event is planned for November 2012.

The second Five-Year Review of the remedy protectiveness has begun and is scheduled for completion by September 2013. A site inspection was completed on September 17, 2012, in conjunction with the site-wide ground water sampling event. A fact sheet was mailed to the residential and business addresses surrounding the ground water plume site, and a public notice was published in the Perryton newspaper. The first Five-Year Review was completed in September 2008 and determined that the remedy is currently protective of human health and the environment. The report is posted on the EPA Region 6 website and a copy is available at the local repository in Perryton. The recommendations to ensure the long-term remedy protectiveness have been implemented, pending implementation of the institutional controls selected in the 2011 ROD Amendment.

Benefits

The pump and treat system has cleaned up the main production zone of the Ogallala aquifer. Successful abandonment of Well No. 2 will allow unrestricted use of the lower flow zone aquifer, the source of drinking water for the City of Perryton.

National Priorities Listing (NPL) History

NPL Inclusion Proposal Date:	September 29, 1998
NPL Inclusion Final Date:	January 19, 1999
HRS Site Score:	50

Wastes and Volumes

The cleanup goal for carbon tetrachloride in the ground water is 5 ppb. The cleanup goal has been achieved for the lower zone in the Ogallala aquifer. The upper flow zone still has contamination above the cleanup goal but behaves as a perched zone and not a part of the primary water production zone in the

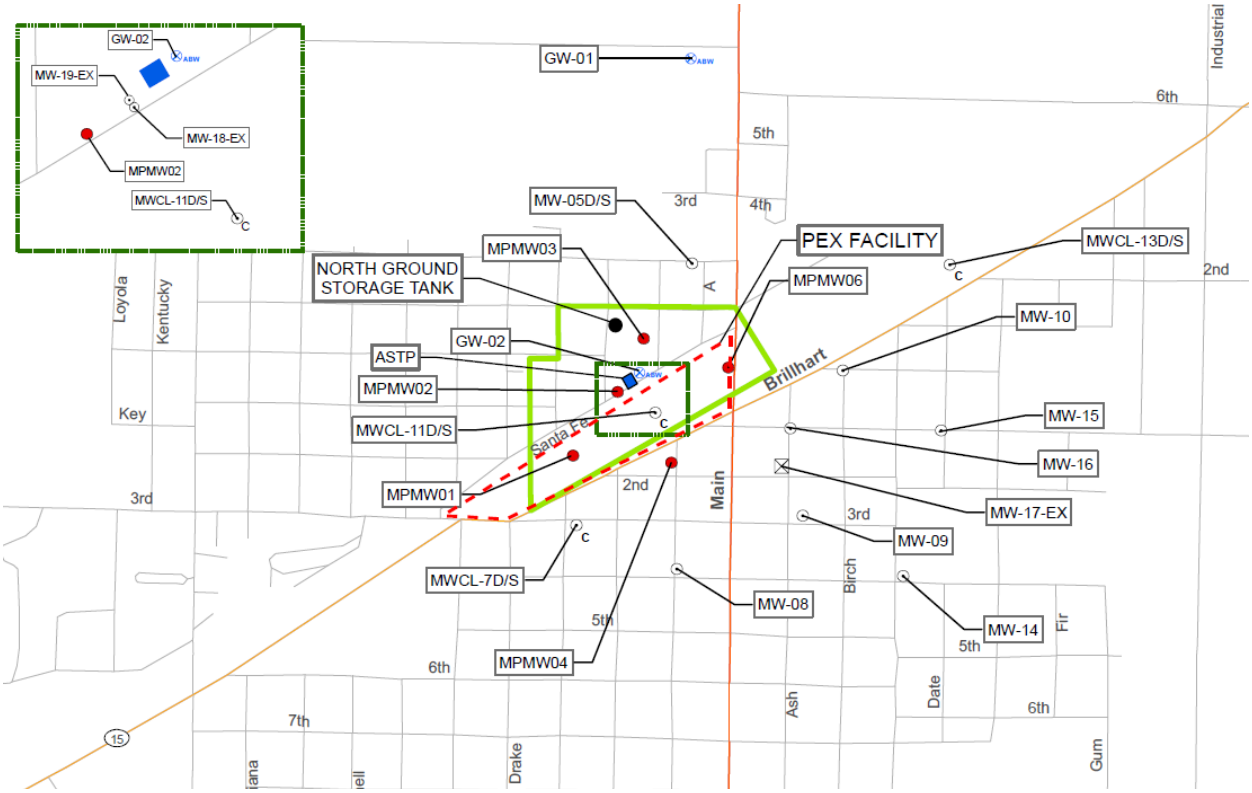
Ogallala. The Ogallala aquifer supplies drinking water to private residences and municipalities as well as water for irrigation across West Texas. The properties located above the contaminant plume are not affected by the ground water contamination.

Health Considerations

The treatment system removed the carbon tetrachloride from the extracted ground water to concentrations below the detection limit of the analyses performed on the water samples. The remaining city water supply wells are not threatened by the contaminant plume and are routinely monitored as part of the requirements of the Federal Safe Drinking Water Act.

Site Map

The site map below illustrates the site-wide monitoring well network that was used to define the extent of the carbon tetrachloride plume in the Ogallala aquifer. The next two maps labeled figures 4 and 5 illustrate the boundaries of the technical impracticability zone for the upper zone and lower unit 2 of the Ogallala aquifer, and the extent of the remaining carbon tetrachloride contamination in the two zones
.



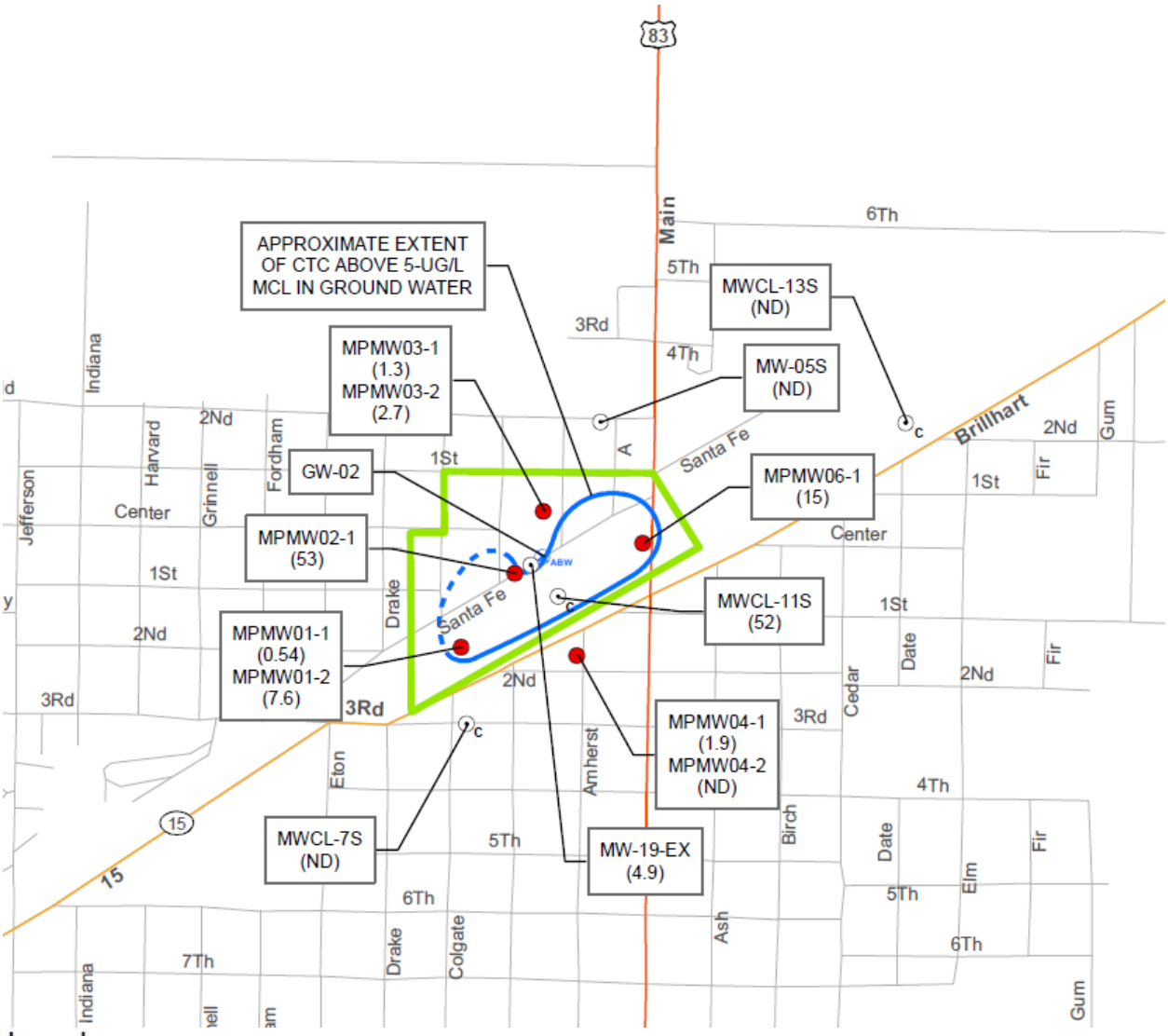


FIGURE 4
Distribution of Carbon Tetrachloride in Groundwater in Upper Zone May 2012
City of Perryton Well No.2 Superfund Site
Perryton, Texas

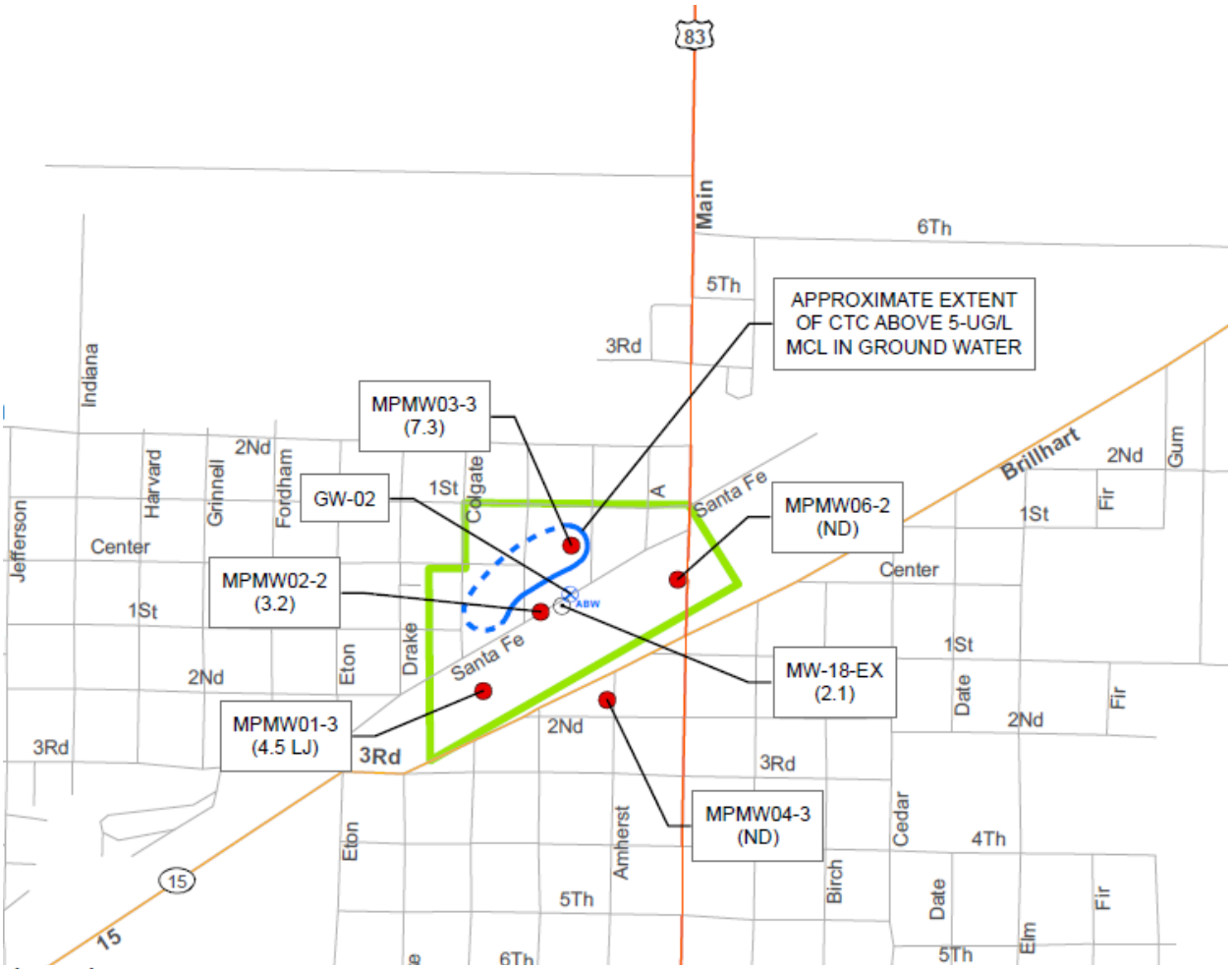


FIGURE 5
Distribution of Carbon Tetrachloride in Groundwater in Lower Unit 2 May 2012
City of Perryton Well No.2 Superfund Site
Perryton, Texas

Record of Decision (ROD)

An Interim Record of Decision was signed on September 29, 1999 and a final Record of Decision was signed on September 26, 2002. An amendment to the Record of Decision was signed on September 29, 2011.

Community Involvement

EPA held a public meeting on August 11, 2011 for the proposed remedy amendment and a public announcement was published in the Perryton newspaper on August 4, 2011.

EPA completed the five-year review process on September 9, 2008, and a public announcement was posted in the Amarillo and Perryton newspapers on September 12th and 14th, respectively.

Information Repository: Perry Memorial Library, 22 S.E. 5th Street, Perryton, TX 7900-3112

Site Contacts

EPA Remedial Project Manager:	Vincent Malott	214-665-8313
EPA Site Attorney:	Elizabeth Pletan	214-665-8525
EPA Community Involvement Coordinator	Jason McKinney	214-665-8132
EPA Regional Public Liaison:	Donn Walters	214-665-6483
TCEQ Project Manager	April Palmie	512-239-4152
EPA Superfund Region 6 Toll Free Number:		1-800-533-3508